

# SURFTENS basic

Solid basic equipment for acquisition of measuring data  
for contact angle, surface free energy and surface tension (SFE)



## Mechanics, Optics, Software and Service from one hand

Since 1992 OEG GmbH has been specialized in development and production of optical measuring equipment.

A key success factor of the company is the unification of the complete production process, beginning from conception, development of mechanics, software and electronics to mechanical production, assembly and calibration in our facilities. Thus, our high quality measuring instruments can be adapted fast and cost effective to meet our customer's special needs and demands. Besides of standard optional building groups customer specific modules can be developed upon request. Those convincing features led to a distribution of our equipment on all continents.

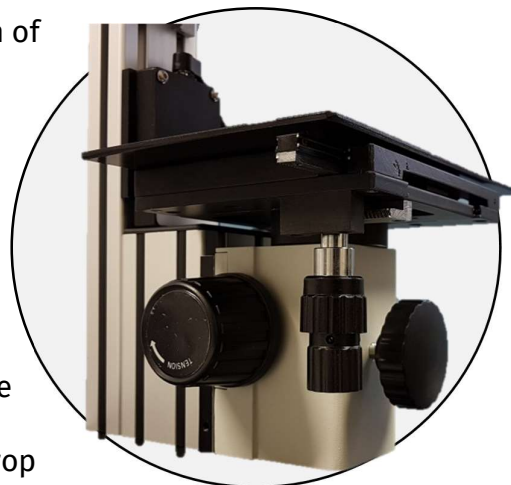
### Perfect solution for many applications

The SURFTENS basic can be utilized for characterization of

- Cleaning processes
- Surface pretreatments
- Studies on the wettability of surfaces
- Characterization of roughness of the surface

By using appropriate measurement methods like

- Static contact angle between liquid and solid
- Dynamic contact angle (advancing angle, receding angle)
- Calculating the surface free energy (SFE) from the contact angles of up to 5 test liquids
- Measuring the surface tension by the pendant drop method
- Acquisition of videos, subsequent analysis of recorded videos



### Easy handling, accurate measurements – fully conform to German DIN norms

All configurations of SURFTENS basic as well as all software versions are fully accordant to the German Industrial norm DIN.

The configuration of SURFTENS basic comprises an adjustable manual lifting table, which allows the sensitive and rapid adaption of the measuring height according to different specimen thicknesses. Even the basic lifting table features a lateral pull-out, avoiding any contact of the needle with the specimen while the sample is placed.

Additionally, the table is moveable transversely to the optical axis using a spindle in order to achieve the correct specimen positioning. Moreover, the height position (z-axis) of the dosing system can be adjusted.

As standard measuring optic a zoom lens is used. In connection with the uniform and bright LED lighting the drop is portrayed with an optimal quality, free of distortion and with the optimal magnification.

The SURFTENS basic includes a 1.3 MP USB camera with a transfer rate up to 25 frames per second in full resolution.

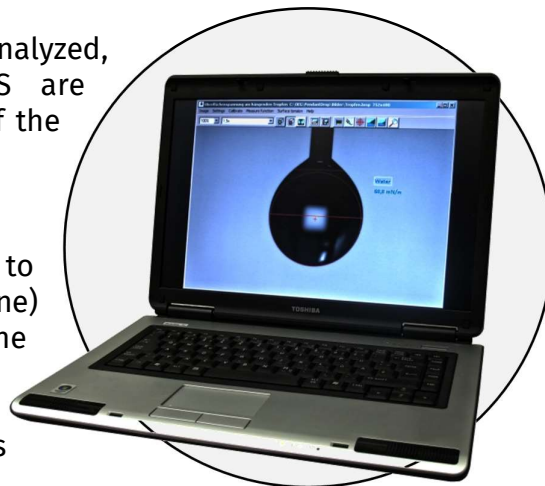


## SURFTENS - Image processing software for accurate drop analysis

SURFTENS-basic is operated by the image processing software SURFTENS which allows precise measurement of contact angle and the calculation of the SFE.

Furthermore SURFTENS offers functions like video recording, image storage, image labeling and creating measurement protocols.

The recorded videos can be played back and analyzed, whereby all measuring functions of SURFTENS are available to the video and to each single picture of the video.



### Calculation of Surface free energy SFE

For determination of the SFE contact angles of up to five different test liquids (e.g. water and diiodmethane) on the solid test specimen get analyzed. From the obtained data the software calculates the SFE using the algorithms according to Wu or Owens-Wendt-Rabel-Kaelble (OWRK), respectively, as recommended by the DIN standard.

### Measurement of surface tension of liquids

The optional software module SURFTENS PD determines the surface tension of liquids by the pendant drop method.

## Technical parameters

### Mechanical basic setup

- base plate, size: 380X260X30mm
- holder for dosing system
- lens holder with fixed viewing angle of 2°

### Measuring optics with C-mount adapter

- Video zoom factor 6,5x
- Magnification 0,35x - 2,25x
- Object field (12 x 8) mm - (1,8 x 1,2) mm
- WD about 100mm

### B/W USB 2.0 Camera with USB 2.0 cable

- 1,3 Megapixel resolution, (1280 x 1024) Pixel
- Up to 25 fps with full resolution
- Up to 100 fps with reduced AOI

### LED Light Source, white

-power supply and brightness controller

### Specimen table

- (100 x 200) mm table size
- 40mm travel in vertical direction (z)
- travel range: x-axis 70 mm; Y-axis 30 mm

### Manual dosing unit

- smallest drop volume: 0,2µl
- dosing resolution / accuracy: 0,1 µl (water)
- Glass or disposable syringe with Luer-lock

### Contact angle measuring data

- Resolution: 0,01°
- Reproducibility: +/-0,1° at the live video
- Accuracy: 0,1°

### Additional necessarily:

- PC or Laptop with USB 2.0 interface



Please do not hesitate to contact us for a special offer!

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